PART TWO

This Special Supplement features a Title Index of all major articles and reports presented during our third year of publication -- 1964.

The Index, however, does not include subjects covered in our regular, weekly departments: Bioastronautics Trends, Bioastronautics Booklist, Bioastronautics Grants and Contracts, Patents and Inventions, Bioastronautics Calendar, etc.

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I N D E X

□ Volume III, Number 1

√ Final Selection of Biosatellite Experiments
Lists the 98 experiments proposed to NASA for biosatellite experiments, including the 40 that were finally chosen.

√ 1963 Bioastronautics Highlights
A review of the major USAF accomplishments in bioastronautics.

□ Volume III, Number 2

√ NASA Bioastronautics Budget
A breakdown of bioastronautics funds requested by NASA for FY 1965. Includes funds for the biosatellite program, space medicine, biosciences and human factors systems.

√ Manned Space Flight Programs
Status and plans for the Apollo and Gemini missions.

□ Volume III, Number 3

√ MOL Simulator Operation
Planned operation of the MOL simulator at Brooks AFB, Tex. Also, reports on work being done on the problems of solar flare radiation hazard, blood pooling during extended weightlessness, visual capabilities in space and types of atmosphere for spacecraft.

√ Study Grants for Aerospace Physicians
Plans of NASA to award grants for further training in the physical, psychological and biological problems in manned space flight.

□ Volume III, Number 4

√ Scientific Experiments for Gemini
Scientific experiments scheduled for the 3rd, 4th and 5th Gemini flights broken down into aeromedical, space vehicle improvement, scientific, extravehicular activity, observation of earth and space objects, and autonomous navigation.

√ Biosatellite Experiments
14 experiments chosen for NASA's first biosatellite, scheduled for a 3-day flight in late 1965. Lists the experiments and designers.

□ Volume III, Number 5

√ NASA-DOD Bioastronautics Coordination
Two systems for eliminating duplication between NASA, DOD and other Federal agencies are discussed and analyzed. One system involves a major meeting a year and five smaller meetings between working groups, and the other is based on computer cataloging.

√ "Dividends" from Space Science Program
The first of a two-part series describing some "practical results" in the life sciences that have resulted from NASA's space science program. More than one-third of these results were in the area of bioastronautics.

√ NASA Bioastronautics Program
Discovery of a cause of motion sickness, precise methods for measuring the degree of this sickness, and possible methods for control, topped the list of important human research findings by NASA in 1963.

□ Volume III, Number 6

√ Boeing Life Support Test
Causes for failure of the first test of Boeing life support system and the early results that were obtained from the second test. Describes the material changes and systems design changes that made the second test more successful.

√ 24-Man Space Station
Cylindrical space station with a normal crew of 24 and accommodations for a maximum of 36 persons, which was recommended to NASA by Douglas Aircraft.

□ Volume III, Number 7

√ First Gemini Crew
The selection of the first Gemini crew (Grissom and Young) and their back-up crew (Schirra and Stafford) by NASA is reported. Also a report on the grounding of Alan Shepard by labyrinthitis.

√ Third Manned Spaceflight Meeting
Sessions of interest planned for the AIAA and NASA-sponsored Third Manned Spaceflight Meeting.

□ Volume III, Number 8

√ Orbiting Space Station
Major revision of the U.S. manned spaceflight effort with key changes being a strechout of the Apollo program and the initiation of an orbiting space station development project. Discusses small station missions, the place of MOL in the national program, military participation in the space station project, and major NASA orbital station concepts.

√ Navy Fire Hazard Studies
A series of tests conducted at the U.S. Naval School of Aviation Medicine, which showed that a 5 psia, 100% oxygen atmosphere will significantly lower the ignition point and increase the rate and temperature of burning for several spacecraft materials.

□ Volume III, Number 9

√ Gemini Biomedical Experiments
Reports that the 9-experiment medical program for Gemini is generally more sophisticated than that performed by the Mercury astronauts and contains five new experiments. Each of the planned experiments is described.

√ Human Radiation Tolerance
Radiation effects on man. It is hoped that this study will provide data to help determine permissible radiation for all humans and to set more realistic dose limitations for both long and short-term spaceflight missions.

□ Volume III, Number 10

√ Spacecraft Environment Problems
Discusses the results of a study performed at Brooks AFB, Tex. that showed the use of a single gas at 5 psi atmosphere to be feasible for 30 days "without any impairment of man's ability to carry out his duties or without creating any physiologic decrement."

√ Aerospace Medicine Awards
Awards for "excellence and outstanding achievement in aviation and space medicine and the life sciences" presented to 10 members of the Aerospace Medical Association.

√ Sealab I Crew
Report of the first crew to spend three weeks in a 40-foot undersea capsule in 192 feet of water. The men and their proposed functions are listed.

□ Volume III, Number 11

√ Space Station Medical Studies
A report on the call by NASA for space station medical equipment. Discusses the funding of this project and its general purpose. Also describes the missions that this equipment is to be used for and the types of equipment sought by NASA.

√ Mars Life Detection Instruments
Call by the American Institute of Biological Sciences for NASA to place a 15 pound-plus package of life-sensing instruments aboard the 1969 Mars shot.

□ Volume III, Number 12

√ Occupational Medicine
Competition to select contractors for occupational medicine services at NASA installations. Includes information on contractor duties, NASA management plan, and eligible contractors.

√ U.S. - Soviet Bioastronautics Cooperation
A small beginning in U.S. - Soviet exchange of space biology and medicine information. The plan is to publish documents by Soviet and American authors on the same subject in both English and Russian.

√ Automated Biological Laboratory
A large automated vehicle containing a wide variety of devices to probe for extra terrestrial life, and to study the chemistry and physical condition of alien environments is proposed and described by NASA.

□ Volume III, Number 13

√ U.S. and Soviet Zero-G Problems
Explores the concern over the short and long-term effects of weightlessness in extended space missions, and the use of artificial gravity devices to overcome such problems as muscle-tone loss, bone demineralization, post flight cardiovascular function and readaptation to normal earth gravity.

√ Experiments for the Fifth OGO
The 22 experiments and experimenters for NASA's fifth Orbiting Geophysical Observatory (OGO-E).

√ After Apollo - What?
The major ideas that are being discussed by different Administration officials as to the direction that the space program should take after Apollo.

√ Astronaut Assignments
Specific assignments for all of the Astronauts currently in the U.S. space program.

□ Volume III, Number 14

√ Manned Space Flight Proposals
Call by NASA for proposals for experiments to be carried on a "space-available" basis aboard scheduled Gemini and Apollo earth-orbital missions. Also requested were experiment proposals for Apollo manned Lunar landing missions, large space stations and ideas for manned planetary missions. As a guideline for the proposed experiments, vehicle spaces available for experimental uses are given.

□ Volume III, Number 15

√ Astronaut Training and Ranger VII Pictures
Discusses the training of the Astronauts due to be on the first Apollo mission and the results of the Ranger VII pictures.

√ Post-Apollo Plans
Reports on NASA's outline of possible additional astronautical missions beyond Gemini and Apollo.

√ Third International Bioastronautics Symposium
Tentative program of the Third International Symposium on Bioastronautics and Exploration of Space. Reports on the Air Force Manned Orbiting Laboratory (MOL) were expected to highlight this six-session meeting.

□ Volume III, Number 16

√ Bioastronautic Porpoises ?
The suggestion that porpoises be used for bioastronautics research. Advantages of porpoises over the traditional animal subjects are said to include low error level performance and the possibility of more precise communications.

√ Mars Exolife Detection
Objectives of the NASA Mariner Martian probes, with particular reference to the aim of detecting exolife.

□ Volume III, Number 17

√ Warsaw IAF Meeting
International cooperation shown at the Warsaw meeting of the International Astronautical Federation. Also discusses in detail the proposal for an International Lunar Laboratory and the type of experiments that could be carried out in such a vehicle.

√ Space Maintenance Simulator
Space Maintenance Facility at the Air Force Aero Propulsion Laboratory, Wright-Patterson AFB. Also discusses the planned uses of this facility.

√ Mars Exploration Project
Factors being studied by NASA before it makes a decision on an unmanned Mars soft-landing probe for the 1971 "window" period.

□ Volume III, Number 18

√ New Exolife-Detection Approach
New approach for the detection of exolife developed by Martin Co. researchers, which requires soft landings, but does not require the cultivation of extraterrestrial cells.

√ Health Physics Fellowships
Fellowship program by the Atomic Energy Commission for college science graduates interested in health physics and scientists working in the field.

√ Miniature Temperature Sensor
Development and application of a sensor so small it reportedly can measure temperatures inside cells without disturbing their balance.

□ Volume III, Number 19

√ Soviet Satellite Spotlights U.S. Difficulties
Some of the U.S. difficulties in operational biomedical space exploration in light of the Soviet three-man Voskhod flight.

√ Lockheed Manned Space Programs
Formation of Lockheed Missiles and Space Co.'s Manned Space Programs organization.

√ Programmed Medical Instruction
Newly formed national clearinghouse for exchange of information on programmed medical instruction.

□ Volume III, Number 20

√ Manned Space Expeditions Downgraded?
Report by the Space Science Board of the National Academy of Sciences that urged NASA to emphasize unmanned space exploration in the post-Apollo Program.

√ Spacecraft Life-Support System Subcontractors
Lists nine major subcontractors selected by General Dynamics Astronautics for work on a long-term manned spacecraft life-support system it is developing for NASA's Langley Research Center. Includes a description of the projects the subcontractors will be working on.

√ Scientist-Astronauts
Reports NASA's program to recruit 10-20 scientist-astronauts. Includes the requirements that an applicant must meet to be eligible.

√ MOL Simulator Studies
Reports announced experimental areas for the Manned Orbiting Laboratory simulator at the USAF Aerospace Medical Center.

□ Volume III, Number 21

√ Air Force Expectations on MOL
Reports Air Force expectations on the Manned Orbiting Laboratory (MOL) program. Also describes the design parameters, laboratory arrangement, laboratory structure, crew transfer methods, electrical power and cabin environment of the proposed project.

√ Lockheed and Boeing MOL Teams
Reports the formation of teams to bid for the MOL program by both Lockheed and Boeing.

√ Post-Apollo Priorities
Clarifies earlier reports by describing in detail the recommendations of the Space Science Board for post-Apollo priorities.

□ Volume III, Number 22

√ Space Station Bioastronautics Study Areas
Outlines potential bioastronautics study areas to be performed on future manned orbiting spacecraft as announced by Apollo-X program planners. Also describes the experimental parameters.

√ Further Controversy on Post-Apollo Priorities
A report describing NASA as "unlikely" to follow the National Academy of Sciences-Space Science Board recommendations that unmanned probes of Mars be established as the national post-Apollo priority space effort.

√ Air Force Isolation Studies
Describes experiments planned and equipment to be used in two-month isolation studies planned by the Air Force.

□ Volume III, Number 23

√ MOL Future
Reports, in detail, the feelings of influential Congressmen and Presidential advisors about the MOL program. Optimism for a quick, favorable decision on the program was seen waning.

√ Human Eye in Space
Describes experiments used and conclusions reached by researchers studying whether astronauts can spot other orbiting spacecraft for rendezvous or other purposes using the naked eye.

√ Design Criteria for Astronaut Biomedical Lab
Reports on a three-month, $100,000 study of design criteria for a spaceborne biomedical laboratory that could be operated by astronauts in flight.

√ Manned Orbiting Astronomical Observatory
Describes the modes of operation to be studied in connection with the proposed manned orbiting astronomical laboratory to be used in conjunction with NASA's planned Manned Orbital Research Laboratory (MORL).

□ Volume III, Number 24

√ MOL Funding
Reports Administration plans for MOL funding in FY 1965 and speculates on plans for 1966.

√ Mars Mission Controversy
Outlines the controversy between NASA and many scientists on the need to spend millions to search for life on Mars. Also considers the charge that scientific advice to NASA has been "stacked".

√ Natural-Habitat Animal Labs
Outlines a report by a Stanford Research Institute scientist calling for "natural-habitat" labs for test animals. He believes correlation of drug test results on animals with results on humans would thus be upgraded.

√ Environmental Systems Test
A detailed report of Boeing's 30-day manned environmental system assessment program. Called MESA II, this program was the second attempt to investigate various aspects of a closed operating life-support system including man.

√ Noise Problems in Space
Outlines the problems of noise or the lack of it, encountered by astronauts on long-duration flights.

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